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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,950	06/27/2003	Wenpeng Hsueh	RAE004US	3044
27906	7590	05/26/2005		EXAMINER NATALINI, JEFF WILLIAM
			ART UNIT 2858	PAPER NUMBER

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/607,950	HSUEH ET AL. 	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jeff Natalini	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 March 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 13-36 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 24-26 is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 March 2005 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                         |                                                                             |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                         | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13, 19, 22, 23, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6320388) in view of Gibson et al. (Pub 2003/0146082).

In regard to claim 13, 19, 22 and 27, Sun et al. discloses, a process for operating a detector comprising:

(a) generating a measurement signal in a photo ionization detector (fig 2) from a current of ions (col 7 line 62- col 8 line 5) produced by exposing sample gas to output from a lamp operated at an initial level of a drive power (abstract and fig 2);

(b) determining a concentration of ionizable gases using the measurement signal generated in step (a) and a mapping of measurement signal levels to concentrations of the ionizable gases (col 7 line 14-34);

It is disclosed that a second ionization current of a gas for UV photons having a second energy is done (fig 7 (620)) and would determine the concentration at this other energy (col 7 line 49-50).

Sun et al. lacks wherein the drive power is changed to the second energy in response to a trigger event that indicates that intensity of the output may have changed.

Gibson et al. discloses wherein the drive power is changed to a new level in response to a trigger event that indicates that intensity of the output of the lamp (pg 3

para 34) has fallen from a previous level and teaches that the concentration is continuously sensed to see if it is outside of the range (pg 3 para 40 and 43; concentration of gas has changed so it is regulated, and would be determined again to make sure it is in a proper range).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Sun et al. to change the drive power to a new level in response to a trigger event indicating a change in lamp intensity as taught by Gibson et al. in order to regulate the concentration of gas in the system (end of paragraph 43).

In regard to claim 23, Sun et al. discloses wherein calibration occurs according to an intensity of the UV light (col 5 line 6-10, so every time intensity changes, calibration is done).

3. Claims 14 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6320388) and Gibson et al. (Pub 2003/0146082) as applied to claim 13 above, and further in view of Cheung (2002/0171819).

Gibson et al. as modified lacks wherein the trigger even comprises reaching an operating time or fixed interval of time since the last calibration.

Cheung teaches calibration scans at the end of a given time period, this will occur continuously, and thus have an operating time between each calibration (pg 2, paragraph 18).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to have a fixed amount of time between each

calibration as taught by Cheung in order to account for the fact that the longer a lamp has been on the more stable it gets, so there must be a fixed number of calibrations to control this (pg 2 paragraph 18).

4. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6320388), Gibson et al. (Pub 2003/0146082), and Cheung (2002/0171819) as applied to claims 14 and 13 above, and further in view of Kuroe (5703489).

Gibson et al. as modified lacks wherein the trigger event has parameters selected according to previous calibrations so that a change between a drive power of the last calibration and a preceding calibration is selected to select the operating time based or to select an amount of change in the drive power.

Kuroe teaches wherein the trigger event has parameters selected according to previous calibrations (col 6 line 50-62) so that a change between a drive power of the last calibration and a preceding calibration is selected to select the operating time based (col 6 line 50-54) or to select an amount of change in the drive power (col 6 line 55-58).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. as modified to take into account previous calibrations to select the time between calibrations or the change in drive power for each calibration as taught by Kuroe in order to reduce any timing inaccuracies to increase the overall accuracy of the calibration (col 6 line 33-44).

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6320388) and Gibson et al. (Pub 2003/0146082) as applied to claim 13 above, and further in view of Hsi (5773833).

Gibson et al. as modified lacks wherein the trigger event is a change in a zero baseline that corresponds to the measurement signal when the sample gas is free of the ionizable gases.

Hsi teaches that frequent calibration of the detector at "zero gas" is needed (col 2 line 8-10).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to do a calibration when the sample gas is free of the ionizable gas "zero gas condition" as taught by Hsi in order to re-establish a correct baseline current (col 2 line 10).

6. Claims 21, 33, 34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6320388) and Gibson et al. (Pub 2003/0146082) as applied to claim 13 above, and further in view of Kim et al. (6262542).

Gibson et al. as modified lacks a process that includes sensing whether a lamp is operating properly when the drive power is at a new level, this sensing includes sensing the operation of the drive circuit and comparing the signal at the new level with the signal when a drive power is providing more power to the lamp; and in response to this sensing increasing the drive power to provide more power to the lamp.

Kim et al. teaches sensing whether a lamp is operating properly when the drive power is at a new level, this sensing includes sensing the operation of the drive circuit (abstract) and comparing the signal at the new level with the signal when a drive power is providing more power to the lamp (col 3 line 57 – col 4 line 3; the circuit will continuously monitor the drive current that is going through to the lamp, so even when the current is increased, it will still be monitored to make sure it was a proper amount; thus taking into account how much the new additional current is helping the lamp compared to the output of the lamp before the drive current was increased); and in response to this sensing increasing the drive power to provide more power to the lamp (col 4 line 1-3).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. as modified to sense whether the lamp is operating properly at a drive power (that could include comparing a drive power with a increased drive power) and in response increasing the drive power to provide more power to the lamp as taught by Kim et al. in order to achieve a desired current level in a lamp (col 3 line 45-49).

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6320388), Gibson et al. (Pub 2003/0146082), and Kim et al. (6262542) as applied to claim 33 above, and further in view of Sandor et al. (5528288).

Gibson et al. as modified lacks wherein the sensing of the lamp comprising sensing light output from the lamp.

Sandor et al. teaches a known method for monitoring the instantaneous intensity of the light in the integrating cylinder (lamp) with a light intensity sensor to develop a correction factor to increase/decrease the lamp drive current (col 2 line 17-22).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to sense the light output from the lamp to determine proper operation as taught by Sandor et al. in order to improve the overall illumination performance (col 2 line 21-22).

8. Claims 28, 29, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (6225633, herein to be referred to as Sun II) in view of Gibson et al. (Pub 2003/0146082).

In regard to claim 28, 29, 31, and 32, Sun II teaches a photo ionization (fig 2) detector

- (a) applying a drive signal to a lamp (fig 2 (32));
- (b) measuring a current of ions produced by exposing a gas mixture in the detector to output from the lamp (col 2 line 26-30);
- (c) determining whether the current measured indicates the gas mixture contains a concentration of ionizable gas that is above a threshold level (col 7 line 31-36);

Sun II lacks wherein in response to the concentration being above the threshold level applying a second drive signal to the lamp and repeating (b) and (c) and wherein the drive signals are changed in response to a trigger even indicated the intensity may

have changed, where the first and second drive signals are applied based on the concentration.

Gibson et al. discloses wherein upon the concentration being above a certain level or below a certain level (also considered an intensity change) the drive signal is changed (regulated- if concentration was over a level it would be reduced to a level below the high threshold (first level), and if below the threshold would be increased to a level above the threshold (second level)) (pg 3-para 40 and para 43).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Sun II to change the drive power to a new level in response to a trigger event indicating a change in lamp intensity (reaches a threshold) as taught by Gibson et al. in order to regulate the concentration of gas in the system (end of paragraph 43).

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun II and Gibson as applied to claim 28 above, and further in view of Sun et al. (6320388).

Sun II as modified lacks wherein a mapping of the measurement signal level to concentration when the ionization measured resulted from exposing the gas to the output of the lamp when the first and second drive signals are applied.

Sun et al. teaches mapping measurement signal levels to concentration in the gas under test (col 7 line 21-31).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Gibson et al. to map the measurement signal level to

concentration of the gas to be determined as taught by Sun et al. in order to be able to detect the presence of one or more suspected gasses (col 7 line 36-37).

***Allowable Subject Matter***

10. Because applicant has placed into claim 24, all previous dependencies the objection of claims 24-26 is removed.
- Claims 24-26 allowed.

***Response to Arguments***

11. Applicant's arguments with respect to claims 13-23 and 27-36 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff Natalini



V. Nguyen

5/24/2005

VINCENT Q. NGUYEN  
PRIMARY EXAMINER